DOCUMENT RESUME

ED 132 370 CE 009 108

TITLE Exemplary Competency-Based Vocational Teacher Education Project. Industrial Arts Component. Competency Identification Phase: Professional Competencies for Middle and High School Industrial Arts Teachers in Florida. Series No. 2.

INSTITUTION Florida State Univ., Tallahassee. Program of Vocational Education.

SPONS AGENCY Florida State Dept. of Education, Tallahassee. Div. of Vocational Education.

PUB DATE 76

NOTE 52p.; For related documents see ED 131 229-231, ED 131 248-251, and ED 131 272

EDRS PRICE MF-$0.83 HC-$3.50 Plus Postage.

DESCRIPTORS Demonstration Projects; Educational Research; *Industrial Arts; *Industrial Arts Teachers; Job Analysis; Models; *Performance Based Teacher Education; *Performance Criteria; State Surveys; *Task Analysis; Vocational Education

ABSTRACT

This report is one of a series of nine reports of Project ACTIVE (Attaining Competence for Teaching in Vocational Education), a project categorized into three sections: (1) Teaching Components--Cooperative Vocational Education, Industrial Arts, Trade and Industrial, Vocational Business Education, (2) Leadership Components--Administration/Supervision, Career Education, and Research and Evaluation, and (3) Special Needs Components--Disadvantaged, and Handicapped. After presenting an overview of the competency-based vocational teacher education movement and a brief description (goals, objectives, and a conceptual model) of the total exemplary competency-based teacher education project (Project ACTIVE) at Florida State University, the Industrial Arts Component is discussed in five chapters: (1) Introduction--Competency Identification Phase, (2) Review of Related Research, (3) Methodology for Identifying Competencies, (4) Findings and Discussion--Competencies, and (5) Conclusions. The appendixes include a rating scale for use by professional personnel, letters to selected industrial arts teachers and supervisors, and an open-ended response survey. A bibliography is also included. (HD)

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EXEMPLARY COMPETENCY-BASED VOCATIONAL TEACHER EDUCATION PROJECT

INDUSTRIAL ARTS COMPONENT

COMPETENCY IDENTIFICATION PHASE:

PROFESSIONAL COMPETENCIES FOR MIDDLE AND HIGH SCHOOL INDUSTRIAL ARTS TEACHERS IN FLORIDA

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1976

U.S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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CE 009 108

Final Report of
Competency Identification Phase
Of Industrial Arts Component

Project No. VTAD-5 #6-0128

From September, 1975 to June, 1976

EXEMPLARY COMPETENCY-BASED VOCATIONAL TEACHER EDUCATION PROJECT: INDUSTRIAL ARTS COMPONENT

PROFESSIONAL COMPETENCIES FOR MIDDLE AND HIGH SCHOOL INDUSTRIAL ARTS TEACHERS IN FLORIDA

Program of Vocational Education
Florida State University
Tallahassee, Florida 32306

Dr. Robert E. Andreyka

The project reported herein was conducted pursuant to a grant from the Division of Vocational-Technical Education, Florida Department of Education. Contractors undertaking such projects are encouraged to express freely their professional judgements in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent the official position or policy of the Florida Department of Education.

FOREWORD

The competency-based teacher education (CBTE) movement is being explored as a viable alternative to the traditional time-based, course oriented approach to teacher education. The field of vocational-technical teacher education has been involved in CBTE for some time. Several states and teacher education institutions are developing and implementing competency-based programs aimed at preparing and certifying professionally competent vocational educators at various levels. Florida's commitment to competency-based vocational teacher education is well-known.

In an effort to promote CBTE for vocational education, the Florida Department of Education, Division of Vocational Education, funded the initial phase of an exemplary competency-based vocational teacher education project at Florida State University. This project, called Project ACTIVE, is aimed at developing a viable competency-based approach to preparing vocational teachers, administrators, supervisors, and related professionals.

Several individuals have contributed significantly to the progress of this project. Mr. Joe Mills, Director of Vocational Education, Division of Vocational Education, Florida State Department of Education, and Dr. Kenneth Eaddy, Chief, Bureau of Vocational Research, Dissemination and Evaluation, have demonstrated their personal and professional commitments to the competency-based approach. Their support and leadership have made this project possible.

The Industrial Arts component of the project had several contributors. The project staff wishes to acknowledge the valuable contribution made by jury members who validated preliminary competency statements. Their input has added greatly to the validity of the project findings. The reader should refer to page 24 for a complete listing of jury members. Dr. James Heggen, Associate Professor of Industrial Arts, Florida State University, assisted with the Industrial Arts component of the project. Finally, industrial arts instructors throughout Florida who responded to the survey instrument are gratefully acknowledged.

Robert E. Andreyka
Project Director & Program Leader
Vocational Education
Florida State University

This report is one of a series that focuses on the competency and criteria identification phase of the Exemplary Competency-Based Vocational Teacher Education Project at Florida State University. Each report covers one of the teaching, leadership, or special needs components within the project. This series of reports is listed below:

Report No.

TEACHING COMPONENTS

1. COOPERATIVE VOCATIONAL EDUCATION
2. INDUSTRIAL ARTS (competency ident. only)
3. TRADE AND INDUSTRIAL (also delivery system)
4. VOCATIONAL BUSINESS EDUCATION

LEADERSHIP COMPONENTS

5. ADMINISTRATION/SUPERVISION
6. CAREER EDUCATION
7. RESEARCH AND EVALUATION

SPECIAL NEEDS COMPONENTS

8. DISADVANTAGED
9. HANDICAPPED

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OVERVIEW

OVERVIEW

COMPETENCY-BASED VOCATIONAL TEACHER EDUCATION

Very few movements in education have received more widespread attention than the competency-based teacher education (CBTE) movement. Houston and Howsam (1972) reported that rarely, if ever, has any movement swept through teacher education so rapidly or captured the attention of so many in so short a time as has the competency-based movement. Already well underway, the approach offers promise of renovating and regenerating teacher education. Equally significant, the authors added, it appears probable that it will do so in record time.

For those who doubt whether competency-based teacher education is with us to stay, the following sampling of national involvement in CBTE may be somewhat surprising (Andreyka and Blank, 1976):

- over 30 states report either legislative/administrative support for CBTE or are studying the concept seriously;
- nearly a hundred teacher education institutions report either "total" CBTE programs or alternative programs;
- there are at least 20 national consortia, institutes, centers or other groups whose primary or major function is the promotion of the CBTE movement; and
- literally hundreds of articles, position papers, monographs and other publications dealing specifically with CBTE appear monthly.

It seems, then, that much of the time we now spend philosophizing and debating the relative merits and demerits of CBTE and whether it will survive should, perhaps, be directed toward implementing the concept and making it work.

Origin of the CBTE Movement

Like any major educational trend, it is impossible to establish the exact date marking the beginning of the competency-based teacher education movement. The concept seems to have evolved slowly and steadily during the past two decades. Schmieder (1973) has identified some of the motivational forces that appear to have given impetus to the CBTE movement:

1. Introspection of the Educational Community
2. Emphasis on accountability

3. Increased focus of political action on fiscal issues

4. Management organization movement

5. Press for personalization and individualization of education

6. Desire of state education departments to develop more effective certification processes and standards.

Elam (1971) in one of the earliest in-depth looks at the competency-based teacher education movement, placed the origins of CBTE somewhat earlier. He pointed out that CBTE predates the current rage for accountability and most probably has its roots in the general conditions present in society and the institutional responses to them characteristic of the Sixties.

The vocational teacher education field has been involved in the CBTE movement for some time. Early studies by Walsh (1960), Courtney (1968), Crawford (1967), Ratner (1967) and others were aimed at identifying competencies important to vocational and technical teachers and related personnel. The comprehensive competency-based vocational teacher education research and development project at the Center for Vocational Education (Cotrell, et al, 1971) was begun in 1967, before the development of much of the current popularity of CBTE.

Need For Competency-Based Vocational Teacher Education

For many years, vocational and technical teachers, administrators, supervisors and related personnel have received their professional preparation in traditional university-based programs. These programs usually consist of a series of courses focusing upon the acquisition of knowledge and which culminate in a paper and pencil evaluation. This course-oriented approach for preparing teachers and individuals in leadership roles is coming under criticism for not meeting the real needs of practitioners (Finch and Hamilton, 1975; Norton et al, 1975).

Among the shortcomings associated with the traditional approach are:

1. Objectives are vague or general

2. Program is content and textbook-oriented

3. Assessment is only cognitive in scope

4. Content and objectives are based upon tradition

5. Program focuses on general principles but seldom relates these to the problems faced by educators

6. Instruction is not tailored to the needs of individuals

7. The end product is not systematically evaluated

8. Minimum standards of acceptable performance are not established.

Finch and Hamilton (1975) reported that many of the professional courses completed by vocational and technical teachers are offered in random sequence and often focus on principles and techniques related only generally to the teacher's actual role in the classroom and laboratory. Schaefer (1971) reported that present vocational teacher education programs amount to nothing more than small encounters with a large and complex personnel development problem.

Competency-Based Vocational Teacher Education Programs

An increasing number of vocational-technical teacher education programs are exploring the competency-based approach for preparing teachers, administrators, supervisors, and related professionals. Some programs have primarily focused on the professional needs of teachers in particular service areas while others have addressed the professional needs of vocational-technical educators in several service areas and levels. While space does not permit a detailed review of competency-based vocational-technical teacher education programs currently in operation, the following does give a brief overview of some CBTE research and development activities which have focused on identifying competencies needed by vocational educators at various levels and in several service areas.

A study by Courtney (1968) identified the need for a common core approach to competency identification. Courtney reported that much of the controversy surrounding teacher education deals with determining what should be included in programs. A second study (Courtney and Halfin, 1969) involved the identification of professional competencies needed by instructors in vocational agriculture, home economics, trade and industrial education, distributive education, and business education. Forty randomly selected teachers from four different states participated in the study. An important aspect of this research was the use of factor analysis for grouping competencies into categories.

Spaziani and Courtney (1971) conducted a research project in which secondary and community college teachers were asked

to rate 99 professional competencies. The rating scale used was an adaptation of Bloom's taxonomy of educational objectives (Bloom, 1956). Competencies were rated according to level of proficiency needed by teachers: knowledge, comprehension, application, analysis, synthesis, or evaluation.

Terry, Thompson, and Evans (1972) completed a study in Illinois in which 107 vocational educators from all service areas were assembled and asked to identify and categorize professional competencies needed by vocational and technical teachers. Four-hundred-seventy-seven competencies were identified in this manner.

A comprehensive common core CBTE research and development project was conducted by the Center for Vocational Education at The Ohio State University (Cotrell et al., 1971). First, professional competencies (performance elements) common to teachers in all vocational service areas were identified as well as additional competencies important to teacher-coordinators in cooperative vocational education programs. Performance-oriented objectives were then developed for each performance element identified. A total of 384 performance elements were identified by the Center's research.

Next, self-instructional curricular materials based upon the competencies previously identified were developed. Modules were developed that were designed to help teacher trainees attain specific professional competencies. More than 100 separate modules in 10 categories were developed that incorporated the 384 performance elements (Center for Vocational Education, 1974).

These competency-based teacher education modules underwent advanced testing at Colorado State University, Rutgers University, and Florida State University during 1975 (Center for Vocational Education, 1975). Ten additional test sites were added during the Fall of 1975, one in each of the 10 United States Office of Education regions (Hamilton, 1975).

Volger and Patton (1974) reported on a department-wide CBTE program in the University of Michigan occupational educational program. This program was designed to prepare trade and industrial, health occupations, vocational business, and distributive education teachers with generic professional competencies. This program began in 1971 and is now fully implemented. Competencies originally identified by the Center for Vocational Education constituted the basis of the program.

Competency-Based Vocational Teacher Education In Florida

There has been a considerable amount of research and development activity in competency-based vocational-technical teacher education in Florida. In its 1974 report, the Florida State Advisory Council for Vocational-Technical Education recommended that efforts to identify unique competencies needed by teachers in specific vocational program areas be continued and upgraded (Florida Department of Education, 1974). It was reported that during fiscal year 1974 work was begun in State Department funded projects to identify unique professional competencies in home economics, industrial, and diversified education.

In a publication entitled The Florida Program For Improving the Training, Evaluation, and Licensure of Educational Personnel (Florida Department of Education, 1971) it was reported that the executive committee of the Teacher Education Advisory Council requested that a plan be devised to improve teacher education and certification in this state. Current research and development activities reported included:

1. Develop comprehensive statements of teacher competencies and develop instruments for assessing them

2. Conduct research to demonstrate the relationship between teaching competency and student learning

3. Identify and produce material for training teachers and other educational personnel in specified competencies

4. Assist institutions and school districts with staff development for teacher training personnel.

A study was conducted in 1972 (Lima) to identify competencies important to Florida's business education teachers. In 1974, a study was conducted in Florida aimed at identifying common and unique competencies for teacher coordinators in work experience and diversified cooperative training programs. A study completed in 1975 (Perkins) identified 164 professional competencies important to Florida's trade and industrial education teachers.

Phase I of a competency-based teacher education project aimed at trade and industrial education teachers has been completed in the state of Florida (Andreyka, 1975). This program has identified 32 entry level competencies needed by that state's T & I teachers. Also identified were assessment criteria that may be used to assess mastery of the competencies. The project also involved the review of samples of competency-based teacher education instructional materials available from

throughout the country. A wide variety of individuals was involved in competency and criteria identification and validation. Participating were trade and industrial education teachers, administrators and supervisors, teacher educators, state department representatives, Board of Regents representative, and the Florida Industrial Education Association.

Phase II of this project addressed four major issues involved in implementing CBTE. These issues were implementation of CBTE in the university setting, development of a viable preservice and inservice program and the identification of alternative funding sources for competency-based teacher education.

A study completed in 1976 (Blank) identified over 100 professional competencies important to community college technical instructors in engineering, health, distributive, business, and public service technologies in Florida.

EXEMPLARY COMPETENCY-BASED VOCATIONAL TEACHER EDUCATION PROJECT AT FLORIDA STATE UNIVERSITY

Florida State University as well as other universities in Florida and throughout the nation currently prepare teachers and related professionals using the traditional course-oriented approach. These traditional teacher education programs usually vary in content relevance and overall program quality. The FSU Competency-Based Vocational Teacher Education Project was initiated because of feelings by many vocational educators that traditional university courses might not be meeting the real needs of vocational teachers and related professionals.

The Exemplary Competency-Based Vocational Teacher Education Project at Florida State University is aimed at developing and implementing a totally competency-based professional vocational education program. Called Project ACTIVE (Attaining Competence for Teaching In Vocational Education), the project's intention is to overcome many of the shortcomings of the traditional course-oriented approach to preparing professionally competent vocational and technical teachers and related personnel. This is an exemplary project and could serve as a research base for developing a CBTE model for other Florida universities and also other states.

This report is one of a series and it focuses on one component of the project. Other reports have been prepared describing the other teaching, leadership and special needs components within the project. This series of reports covers the initial phase of the project: *Competency and Criteria Identification.* Listed below is the report number for each component.

Goals and Objectives

The long-range goal of the project is to develop an exemplary competency-based vocational teacher education and leadership development program. The project is aimed at meeting the professional needs of the following groups, both at the preservice and inservice levels:

Report No.

TEACHING COMPONENTS

1. Cooperative Vocational Education
2. Industrial Arts
3. Trade and Industrial
4. Vocational Business Education

LEADERSHIP COMPONENTS

5. Administrators/Supervisors
6. Career Education Specialists
7. Researchers

SPECIAL NEEDS COMPONENTS

8. Disadvantaged
9. Handicapped

The research effort was designed to accomplish the following objectives:

**1. Identification and validation of professional competencies (skills) important to vocational teachers and professional support personnel.

**2. Identification and validation of specific assessment criteria for assessing mastery of competencies.

3. Development and/or adoption of performance-based, self-paced learning packages designed to help participants master important competencies.

4. Development of evaluation instruments and strategies providing for objective assessment of competency mastery while the participant is performing in an actual school situation.

5. Implementation of a competency-based program in a traditional university setting.

6. Development of instruments and strategies for overall program evaluation.

**The first two objectives have been accomplished and they are the focus of this series of reports.

Conceptual Model

The first step in the exemplary project was to develop the conceptual framework of the CBTE program. After reviewing various conceptual models of CBTE programs (Elam, 1971; Houston and Howsam, 1972; Norton et al, 1975) the project staff developed a model which would be suitable for vocational-technical teacher education (Andreyka and Blank, 1976). Figure 1 shows a schematic of this model while Figure 2 explains each element of the model in more detail.

Figure 1

CBTE CONCEPTUAL MODEL

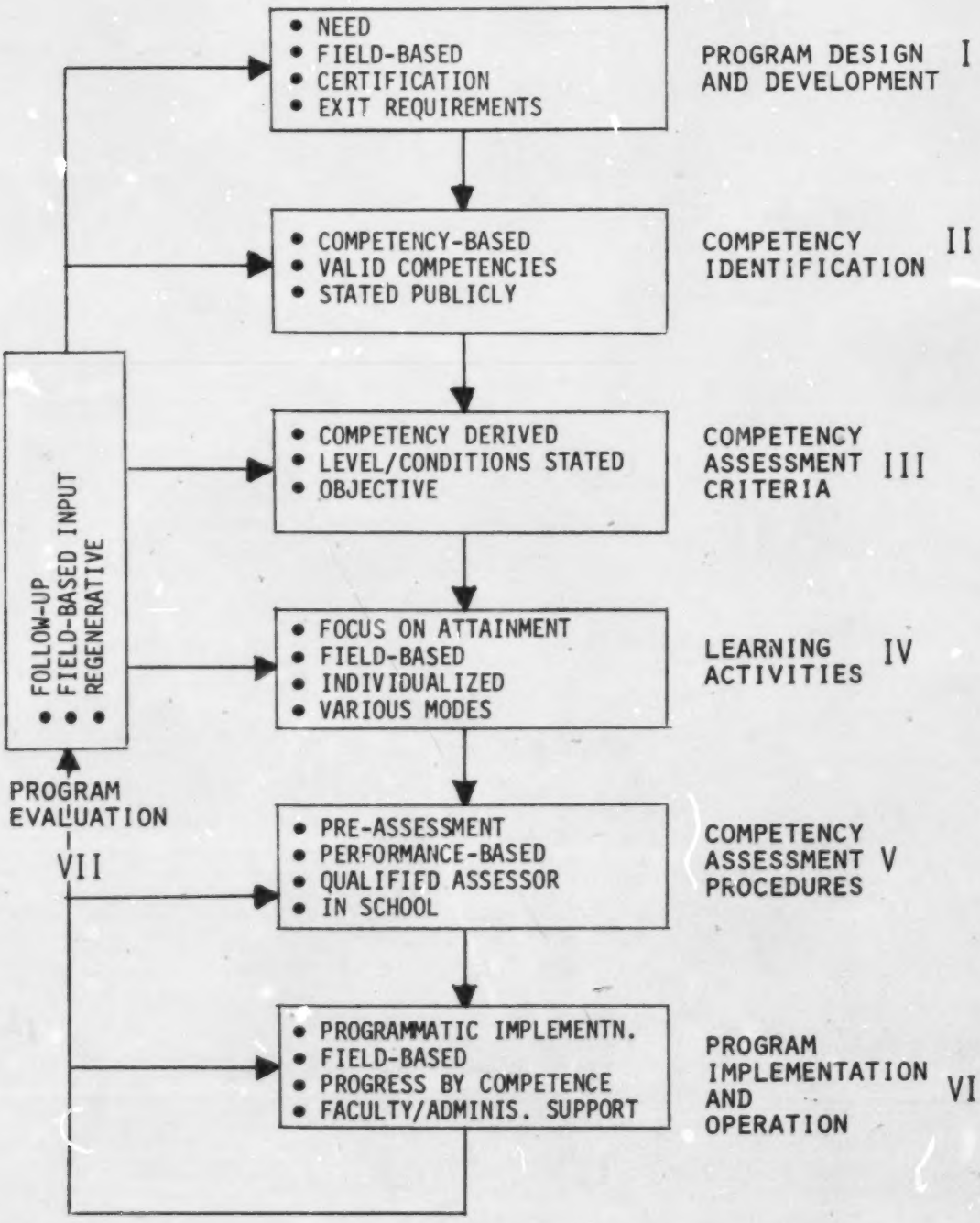

Figure 2

Elements of CBTE Conceptual Model

I. Program Design and Development

A. *Need Identification.* A thorough statement should be provided on the need for the program, including its advantages over the present program and benefits to prospective teachers and their potential students.

B. *Field Based Design Effort.* Evidence should be available that input was received from teachers, state department personnel, parents, students, principals, advisory committees and professional organizations during program design.

C. *Certification.* Program should produce certifiable individuals; certification personnel should be consulted to allow for certification by mastery of competencies rather than by course completion.

D. *Emphasis on Exit Requirements.* The program should place primary emphasis on recording mastery of competencies and eliminating non-relevant entrance requirements.

II. Competency Identification

A. *Basis for Program.* The program should be based solely on appropriate prespecified competencies that have been identified as being important to teachers.

B. *Valid Competencies.* Competencies should be validated by consensus of opinion of qualified experts, or sound research base such as task analysis, teacher poll, literature search or other.

C. *Statement of Competencies.* Teacher trainees should be able to demonstrate, whenever possible, the mastery of competencies as they are stated, and competencies should be made public in advance.

III. Competency Assessment Criteria

A. *Derived from Competencies.* Criteria for assessing competency mastery should be based solely on the competencies themselves.

B. *Expected Level of Performance and Conditions.* The

expected level of performance for successful mastery and under what conditions should be stated and made public in advance.

C. *Objective Assessment Criteria.* Assessment criteria should be specific and objective and based on observable performance by teacher trainee.

IV. Learning Activities

A. *Focused on Competency Attainment.* Learning activities should be focused solely on helping teacher trainees master pre-specified competencies.

B. *Field Based.* Learning activities should be based on actual teaching conditions wherever practical.

C. *Different Modes Available.* Various modes of instruction should be utilized including mediated instruction.

D. *Individualized Instruction.* Self-instructional and self-paced instruction should be available where practical.

V. Competency Assessment Procedures

A. *Pre-Assessment.* Opportunities should be available for pre-assessment for diagnostic purposes and to permit credit for competencies already mastered.

B. *Based on Performance.* Competency mastery should be based primarily on teacher-trainees performance and/or desired change in behavior of students.

C. *Setting.* Assessment should be carried out in an actual school setting whenever practical.

D. *Qualified Assessor.* Assessment should be carried out by one or more qualified resource persons who have teaching experience.

VI. Program Implementation and Operation

A. *Programmatic Implementation.* Total program should be competency based rather than course by course substitution.

B. *Faculty/Administrative Support.* Program should have necessary faculty and administrative support to function on a competency based format.

C. *Field Based.* Program implementation should involve teachers, state department, parents, principals, professional organizations, students and others.

D. *Progress by Competence.* Teacher trainees should proceed through program based on competency mastery rather than by course or time frame.

VII. Program Evaluation

A. *Follow-up.* Follow-up procedures should be established to determine if graduates are as effective as graduates from other programs.

B. *Field Based.* Program evaluation should receive input from various sources in the schools.

C. *Used for Program Improvement.* Program evaluation data should be used directly to improve the program.

Competency and Criteria Identification Phase

This series of reports covers the initial phase of the project which identified professional competencies important to practitioners in each component of the project. Also identified were specific assessment criteria that may be used to assess mastery of the competencies. Subsequent phases of the project will be based upon these professional competencies identified and validated as important to vocational teachers, administrators and related support personnel throughout Florida. Professional competencies important to practitioners within each area of the project were identified, along with assessment criteria, by surveying vocational educators in the field.

Preliminary lists of competencies were identified in each component within the three major areas of the project--teaching, leadership and special needs. Each preliminary competency list was submitted to a jury consisting of persons with expertise in the appropriate area, for preliminary validation. Jury members had broad latitude to revise, add, or delete competency statements.

Based on comments of jury members, the competency statements were revised, compiled on a survey instrument, and submitted to a sample of practitioners in the field for each component of the project with the assumption that teachers and other professionals were qualified to identify competencies most important to them.

These survey instruments were mailed to vocational and technical teachers, administrators, supervisors, researchers, career education specialists and cooperative vocational education teacher-coordinators. These individuals rated each competency as to its importance to them in their positions. Data from returned instruments were analyzed to identify significant differences among sub-groups within each component.

For each competency validated as important, specific, objective assessment criteria were written that may be used by an evaluator to assess whether individuals have mastered the competency. Preliminary criteria statements were written for each competency, submitted to a jury comprised of individuals with expertise and experience in that particular area, and revised based upon a synthesis of jurors' comments.

Later phases of the project will include the adoption and development of learning materials, development of assessment strategies and instruments, implementation in the university setting, and development of program evaluation techniques. This report describes the competency and assessment criteria identification phase for one component within the project. Additional reports have been prepared describing the competency and criteria identification phase of the other teaching, leadership and special needs components.

INDUSTRIAL ARTS COMPONENT—

Competency Identification

CHAPTER 1

INTRODUCTION - COMPETENCY IDENTIFICATION PHASE

Many consider teacher education programs of today not relevant in meeting the needs of potential teachers. The field of Industrial Arts Education is no exception to this charge of not remaining attuned to the actual needs of teachers in the classroom and laboratory. The Industrial Arts faculty at Florida State University has recognized this problem and is participating in the Competency-Based Teacher Education Exemplary Project, which is funded by the State Department of Education, Vocational-Technical Division.

Need

Many feel that the system for educating both teacher and student has been slow in changing its delivery system to meet the demands of a changing society (Byers, 1973). This concern was expressed by Industrial Arts supervisors at a meeting of Industrial Arts supervisors and teacher educators in October, 1975, in Tampa, Florida (Heggen, 1975).

During the past several years, the field of Industrial Arts has changed considerably in the State of Florida. These changes have been mainly in curriculum and the role of the Industrial Arts teacher in the public school. New content organization has emerged because individual needs as well as those of society have placed greater emphasis on career and occupational goals in grades K-12. Cady and Allen (1970) stated that educational personnel have not been in step with our changing society, and that contemporary society requires new approaches to teacher preparation.

In 1970, the Florida Legislature enacted new legislation that made prevocational and technically-oriented Industrial Arts an integral part of a comprehensive vocational education program. A thorough review of the literature has revealed that professional competencies important to Industrial Arts teachers in Florida which reflect the changes that have evolved in the field of Industrial Arts since 1970 have not been identified.

Purpose

The purpose of this study is to identify professional competencies important to Florida's Industrial Arts teachers. Teachers at the middle school and high school level were asked to rate a list of professional competencies as to their importance in the Industrial Arts classroom and laboratory. Competencies identified as being important may then serve as the basis for a teacher education program.

CHAPTER 2

REVIEW OF RELATED RESEARCH

A review of the literature on competency-based teacher education programs in industrial arts reveals that the trend to change must be undertaken in order to meet the needs of future teachers.

The many shortcomings of traditional education teacher training programs as identified by Koerner (1963) and Conant (1963) cite several reasons for change to a CBTE approach: (1) teacher education curricula are not built upon the actual work requirements of teachers, (2) instruction is not tailored to individual needs, and (3) evaluation of the educational product is not very systematic.

Houston and Brown (1975) indicated that competency-based education (CBE) is one of the most significant trends to occur in the past decade. They indicate that all teacher education programs could benefit from implementing CBE. One of the prime advantages of CBE would be the relevancy of curricular content because objectives are: (1) explicitly stated, (2) in terms of learner outcomes, and (3) made available to the learner.

Starkweather (1976) in a report on the status of future teacher training centers cites four reasons for change: (1) the role of the teacher will change to that of a learning coordinator, (2) the utilization of media will become the focal point of instruction, (3) the classroom teacher will be supported by para-professionals, and (4) the teacher will emerge in the form of an entrepreneur or teacher-scholar with the capability of understanding a technological society.

In a survey conducted by Perkins (1975), it was discovered that competencies for teachers who will be instructors in the field of the trade and industry must be determined in order to rank them for proper instructional purposes. It was discovered that the competencies could be grouped into two categories, essential (preservice) and important (inservice), and that 94% of the needed competencies could be obtained by the instructors through knowledges and media that is presently available to educators.

Recently, DeVore and Lauda (1976) stated that two major factors must change in industrial arts teacher education programs: (1) they must be altered in order to prepare teachers capable of teaching new content and utilizing appropriate instructional strategies, and (2) inservice education must be provided to current teachers if we are going to expect them to keep abreast of technology and the ever-changing environment.

CHAPTER 3

METHODOLOGY FOR IDENTIFYING COMPETENCIES

The methodology utilized for the study was a descriptive survey using a questionnaire distributed by mail to industrial arts teachers throughout Florida during 1975-1976.

Selection of the Subjects

The population for the study consisted of middle and high school industrial arts teachers in Florida. Industrial arts teachers in seven Florida counties were chosen to participate in the study. These seven counties (Broward, Dade, Duval, Hillsborough, Lee, Pinellas and Polk) were chosen based on their geographical representation of Florida's 67 counties. Supervisors in these counties were asked to distribute the survey instrument to industrial arts teachers in their counties who were doing an outstanding job as a teacher. Table 1 indicates the number of survey instruments distributed in each of these seven counties.

Development of the Instrument

The project staff developed a preliminary list of competency statements that appeared to be important to middle school and high school industrial arts instructors. This preliminary list of competency statements was based on a review of previous research, state department of education publications, input from project staff members and related sources.

The list of preliminary competency statements was reviewed by the project staff and some items were combined to avoid duplication and others were altered or reworded. The competencies were then randomly listed for review by a jury of industrial arts educators for preliminary validation.

Table 1

Counties Included in the Study

County	Number Distributed
Broward	22
Dade	18
Duval	20
Hillsborough	20
Lee	10
Pinellas	15
Polk	10
Total	115

Validation by Jury

The preliminary list of competencies was submitted to a jury for review. The jury was comprised of a sample of Leon County industrial arts teachers, State Department of Education personnel, and selected Florida State University industrial arts faculty members. Members of the jury were:

1. Mr. Roger Butler, Industrial Arts Department Head, Leon High School
2. Mr. Gil Guimarios, Industrial Arts Teacher (Electronics), Leon High School
3. Mr. Marshall Johnson, Industrial Arts Teacher (Drafting), James Rickards High School
4. Mr. Frank Disalvo, Industrial Arts Teacher (Woodworking), Amos P. Godby High School
5. Mr. Don Filkins, Industrial Arts Department Head, James Rickards High School
6. Mr. George Sewell, Industrial Arts Teacher (Drafting), Amos P. Godby High School

7. Mr. Dan Green, Industrial Arts Teacher (Drafting), Cobb Middle School

8. Mr. Bill May, Industrial Arts Teacher (Woodworking) Fairview Middle School

9. Mr. Carl Hoffman, Industrial Arts Teaching Assistant, Florida State University

10. Dr. William Wargo, Industrial Arts Associate Professor, Florida State University

11. Mr. Ernest Berger, Industrial Arts Associate Professor, Florida State University

12. Dr. Ralph W. Steeb, Industrial Arts Consultant, Department of Education

Revision of the Instrument

The jury members provided significant input for rewording competency statements and reviewing emphasis changes of many competencies. The most important recommendation from the jury was to change the competency format presentation from random order to some form of categorization. The competency list was organized into categories in the final version of the survey instrument, but no categorical headings were used. Competency statements were revised based upon input from the jury. The final version of the instrument (See Appendix A) contained 77 competency statements, instruction, a section with items about the professional background of the respondents, and several blank spaces respondents could use for adding competencies they felt were important. Respondents rated each item on a six-point scale (1=very important and 6=not important) according to importance to them in performing their duties.

Collection and Analysis of Data

Packets containing the instrument, a cover letter for teachers (see Appendix B) and a postage-paid, pre-addressed return envelope was mailed to industrial arts supervisors in the seven counties selected. A letter was enclosed (see Appendix C) asking the supervisors to distribute the instruments to industrial arts instructors in their counties who were doing an outstanding job.

Approximately six weeks after the initial mailing, a follow-up was undertaken to increase the percentage of returns. A follow-up letter (see Appendix D) and a second instrument and return envelope was sent to all non-respondents.

CHAPTER 4

FINDINGS AND DISCUSSION - COMPETENCIES

This section presents the findings of the study based on analysis of data from returned instruments.

Return Rates

A total of 115 questionnaires were distributed with 92 returned for an 80 percent return rate. Two of the instruments were found to be unusable after examination because of a total lack of professional data. The industrial arts teachers were divided into middle and high school subgroups to determine whether there were significant differences in the competencies needed at these two teaching levels. Table 2, shows the return rates from the sample of teachers included in the study along with a breakdown of the returns.

Table 2

Questionnaire Returns

Group	Distributed	Returned	%
Middle School	41	29	70
High School	74	63	85
Total	115	92	80

Professional Data

Included on the instrument were nine questions seeking information about the background and present professional status of respondents. This data may be useful by providing a profile of supervisors and teachers of industrial arts in Florida.

Table 3 indicates the number of years respondents had served in their present teaching position.

Table 3

Number of Years In Present Position (%)

Years	Level		
	Middle School N=29	High School N=63	All Levels N=92
1-5	42	29	34
6-10	26	29	29
11-15	13	14	13
16-25	19	22	21
over 25	0	7	4

Table 4 shows the number of years respondents had taught in industrial arts programs.

Table 4

Number of Years Teaching Industrial Arts (%)

Degree	Level Middle School N=29	High School N=63	All Levels N=92
1-5	39	24	29
6-10	19	25	23
11-15	13	17	16
16-25	29	25	27
over 25	0	9	5

Table 5 shows the number of years of experience in business or industry possessed by industrial arts instructors responding to the instrument. Sixty-two percent of all instructors had five years of experience or less.

Table 5

Number of Years in Business or Industry (%)

Years	Level Middle School N=29	High School N=63	All Levels N=92
unknown	3	2	2
0-5	61	62	62
6-10	16	19	18
11-15	7	5	6
16-25	7	8	8
over 25	7	3	4

Table 6 indicates the highest degree held by respondents. Forty-eight percent of the industrial arts instructors in the sample held a masters degree. Only one percent held a doctorate

Table 6

Highest Degree Held (%)

Degree	Level Middle School N=29	High School N=63	All Levels N=92
unknown	3	0	1
B.S.	55	36	42
M.S.	35	52	48
Ed.S.	3	12	9
Ph.D.	3	0	1

Table 7 shows the ages of respondents.

Table 7

Ages of Respondents (%)

Age	Level Middle School N=29	High School N=63	All Levels N=92
21-30	39	24	29
31-40	26	29	28
41-50	23	29	27
51-60	10	19	16
61 or over	3	0	1

Table 8 shows the sex of respondents. Of the industrial arts instructors responding to the survey, 98 percent were male.

Table 8

Sex of Respondents (%)

Sex	Level		
	Middle School N=29	High School N=63	All Levels N=92
Male	97	98	98
Female	3	2	2

Importance of Competencies

The mean importance rating for each of the 77 competencies as rated by middle school and by high school industrial arts instructors was computed.

A t-test was used to determine if there were any significant differences in the mean importance ratings between middle and high school teachers.

Table 9 shows the mean importance rating for each competency statement on the survey instrument for middle and high school teachers. Also shown in Table 9 is the mean importance rating for all teachers. Table 9 also indicates those items that received significantly different mean importance ratings by middle and high school teachers. Of the 77 items on the instrument, only three were rated significantly different.

Open-Ended Responses

In addition to the competency statements on the instrument were several blank spaces in which respondents added competencies they felt were important. Appendix E lists these open-ended responses added by administrators and supervisors of vocational education programs in Florida.

Table 9

Importance Ratings Of Competencies By

Middle and High School Industrial Arts Teachers

Rank / Mean	Item	Competency	Rank/Mean Middle School Teachers N=29	Rank/Mean High School Teachers N=63	t-Values
1 / 1.149	48	Enforce safe working procedures and habits relating to tools and machinery.	1 / 1.103	2 / 1.172	-.68
2 / 1.178	70	Maintain a positive attitude and a high level of confidence in self.	2 / 1.194	1 / 1.170	.28
3 / 1.207	55	Maintain an orderly classroom.	3.5 / 1.241	3 / 1.190	.43
4 / 1.276	51	Organize and maintain the Industrial Arts laboratory.	3.5 / 1.241	6 / 1.293	-.29
5 / 1.287	50	Take precautions against fire and other dangers.	29 / 1.772	8 / 1.345	-1.15
6 / 1.289	68	Exhibit a positive attitude toward recommended machine and tool use and care.	5 / 1.323	4 / 1.271	.46
7 / 1.299	52	Maintain a system of tool and equipment maintenance.	6 / 1.345	5 / 1.276	.51
8 / 1.333	72	Use effective oral communication.	10.5 / 1.387	7 / 1.305	.61
9 / 1.378	66	Maintain high level of enthusiasm toward teaching.	7 / 1.355	10 / 1.390	-.24
10 / 1.379	56	Assist students in developing self-discipline.	9 / 1.379	9 / 1.379	0
11 / 1.422	67	Exhibit a positive attitude toward the school, staff and administration.	10.5 / 1.387	14 / 1.441	-.35
12 / 1.442	60	Utilize appropriate classroom and laboratory housekeeping practices.	8 / 1.357	16 / 1.483	-.96
13 / 1.478	73	Complete assigned tasks on time.	14.5 / 1.516	15 / 1.458	.36
14 / 1.478	69	Exhibit a positive attitude toward the world of work.	18 / 1.581	12 / 1.424	1.08
15 / 1.494	24	Direct student laboratory experience.	13 / 1.500	17 / 1.491	.05
16 / 1.494	53	Maintain a system for inventory of equipment and equipment records.	22 / 1.690	11 / 1.397	1.75
17 / 1.528	75	Demonstrate behavior and procedures appropriate for a professional educator.	14.3 / 1.516	19 / 1.535	-.11
18 / 1.558	54	Maintain a system of inventory for supplies.	30 / 1.793	13 / 1.439	2.00
19 / 1.567	25	Direct students in applying problem-solving techniques.	19.5 / 1.645	18 / 1.525	.85
20 / 1.622	31	Demonstrate a manipulative skill.	12 / 1.484	21 / 1.695	-1.06
21 / 1.697	4	Comply with state laws and regulations relative to education.	17 / 1.533	27 / 1.7[illegible]	-1.37
22 / 1.701	49	Provide for first aid needs of students.	16 / 1.517	28 / 1.79[illegible]	-1.16
23 / 1.733	62	Maintain student attendance records.	34 / 1.897	20 / 1.649	.97

* Significantly different at .05 level

Table 9 (continued)

Rank / Mean	Item	Competency	Rank/Mean: Middle School Teachers N=29	Rank/Mean: High School Teachers N=63	t-Values
24 / 1.747	33	Direct individualized instruction.	27 / 1.759	22 / 1.741	.08
25 / 1.753	1	Identify deficiencies in Ind. Arts program such as facilities, tools, equipment, etc.	23.5 / 1.710	24.5 / 1.776	-.35
26 / 1.753	15	Establish an order of business for each class/lab sessions.	23.5 / 1.710	24.5 / 1.776	-.33
27 / 1.759	36	Illustrate with models and real objects.	21 / 1.655	29 / 1.810	-.82
28 / 1.759	46	Evaluate instructional effectiveness.	25 / 1.724	24.5 / 1.776	-.26
29 / 1.764	71	Use effective written communication.	26 / 1.742	23 / 1.776	-.16
30 / 1.767	10	Identify long-range goals for a course.	19.5 / 1.645	32 / 1.831	-.93
31 / 1.828	32	Demonstrate a concept or principle.	32 / 1.828	30 / 1.828	0
32 / 1.843	77	Demonstrate broad knowledge of industry.	33 / 1.867	32 / 1.831	.20
33 / 1.878	29	Provide instruction for slower and more capable students.	39.5 / 1.968	32 / 1.831	.70
34 / 1.907	58	Prepare request for tools and equipment for county and state funding guide.	27 / 1.759	39 / 1.983	-1.14
35 / 1.911	14	Select and use text, reference material and special teaching aids.	35.5 / 1.903	35 / 1.915	-.07
36 / 1.955	30	Present information through an illustrated talk.	41.5 / 2.032	34 / 1.914	.58
37 / 1.974	59	Identify and obtain additional sources of revenue for program.	44 / 2.036	36 / 1.944	.35
38 / 1.978	26	Direct the project method.	41.5 / 2.032	37 / 1.949	.35
39 / 1.989	9	Develop a comprehensive teaching plan for a term's work.	35.5 / 1.903	42.5 / 2.034	-.59
40 / 1.989	61	Utilize laboratory-oriented student personnel system.	37 / 1.931	41 / 2.017	-.37
41 / 2.000	28	Employ reinforcement techniques.	38 / 1.936	42.5 / 2.034	-.51
42 / 2.000	76	Establish a professional library.	39.5 / 1.968	40 / 2.017	-.22
43 / 2.022	74	Belong to and participate in appropriate professional organizations.	51 / 2.129	38 / 1.966	.78
44 / 2.044	16	Prepare directions for a substitute teacher.	31 / 1.807	46.5 / 2.170	-1.61
45 / 2.047	57	Project resource needs.	47.5 / 2.069	44 / 2.036	.18
46 / 2.070	47	Construct, use and interpret evaluation devices.	43 / 2.035	45 / 2.088	-.28
47 / 2.135	17	Provide performance-based instruction.	45 / 2.067	46.5 / 2.170	-.44
48 / 2.174	43	Present information with the chalkboard.	49 / 2.107	48 / 2.207	-.41

Table 9 (continued)

Rank / Mean	Item	Competency	Rank/Mean: Middle School Teachers N=29	Rank/Mean: High School Teachers N=63	t-Values
49 / 2.211	27	Employ oral questioning techniques.	46 / 2.097	49 / 2.271	-.84
50 / 2.221	44	Design, experiment with and solve technical problems.	47.5 / 2.069	52 / 2.298	-.88
51 / 2.236	6	Coordinate Industrial Arts program with other disciplines.	51 / 2.129	51 / 2.293	-.84
52 / 2.318	45	Assess student performance with respect to cognitive, affective and psychomotor objectives.	56 / 2.345	53 / 2.304	.16
53 / 2.348	21	Direct students in instructing other students.	53 / 2.200	55 / 2.424	-.96
54 / 2.356	2	Maintain contacts with industry.	59 / 2.452	54 / 2.305	.68
55 / 2.389	11	Meet the needs of disadvantaged students in the Industrial Arts program.	51 / 2.129	59 / 2.525	-1.53
56 / 2.393	8	Develop and use unit lesson plans.	54 / 2.258	56 / 2.466	-.86
57 / 2.471	39	Present information with filmstrips and slides.	58 / 2.448	57 / 2.483	-.14
58 / 2.489	7	Apply research in Industrial Arts.	60.5 / 2.484	58 / 2.492	-.03
59 / 2.500	23	Direct student study of texts and references.	68 / 2.963	50 / 2.288	2.70*
60 / 2.581	40	Present information with films.	55 / 2.379	61 / 2.684	-1.13
61 / 2.622	3	Identify the appropriate county and state personnel to solve educational problems.	63 / 2.613	60 / 2.627	-.06
62 / 2.700	13	Meet the needs of handicapped students in the Industrial Arts program.	60.5 / 2.484	66 / 2.814	-1.13
63 / 2.733	19	Conduct group discussions.	64 / 2.677	63 / 2.763	-.35
64 / 2.736	38	Present information with overhead projector.	62 / 2.586	65 / 2.810	-.72
65 / 2.782	64	Maintain individual student assessment profiles of skills and attitudes.	70 / 2.966	62 / 2.690	.93
66 / 2.839	37	Illustrate with bulletin boards.	57 / 2.414	67 / 3.052	-2.25*
67 / 2.860	63	Maintain cumulative records.	71 / 3.000	64 / 2.790	.59
68 / 2.898	35	Present information using a subject matter expert.	66 / 2.793	68 / 3.086	-1.22
69 / 2.988	42	Direct programmed instruction.	65 / 2.724	69 / 3.123	-1.36
70 / 3.211	22	Employ the techniques of role-playing and simulation.	67 / 2.807	72 / 3.424	-2.10*
71 / 3.235	20	Stimulate learning through brainstorming and buzz group techniques.	69 / 2.965	70 / 3.368	-1.40
72 / 3.303	5	Establish and maintain an advisory committee.	73 / 3.167	71 / 3.373	-.88

Table 9 (continued)

Rank / Mean	Item	Competency	Rank/Mean: Middle School Teachers N=29	Rank/Mean: High School Teachers N=63	t-Values
73 / 3.303	18	Direct individual and group field trips.	72 / 3.065	73 / 3.431	-1.30
74 / 3.506	65	Organize and operate an Industrial Arts club.	75 / 3.419	74 / 3.552	-.40
75 / 3.621	41	Present information with televised materials.	74 / 3.276	76 / 3.793	-1.60
76 / 3.698	34	Conduct team teaching.	76 / 3.724	75 / 3.684	.12
77 / 4.057	12	Provide bilingual instruction to meet the needs of students with language difficulties.	77 / 3.871	77 / 4.158	-.92

* Significantly different at .05 level

CHAPTER 5

CONCLUSIONS

Based on the analysis of data from returned instruments, several conclusions may be drawn. It appears as if there are a large number of professional competencies important to Florida's middle and high school industrial arts teachers. Of the 77 competency statements on the instrument, only four received a mean importance rating greater than the midpoint (3.500) on the six-point rating scale. These items were "present information with televised materials", "conduct team teaching", and "provide bilingual instruction to meet the needs of students with language difficulties". It might be concluded that middle and high school industrial arts instructors are called upon to execute many tasks in the performance of their teaching and related duties. The conclusion may also be drawn that the jury did an excellent job of reviewing and screening the preliminary list of competencies.

A final conclusion is that the competencies important to middle school and high school industrial arts teachers are somewhat similar. Of the 77 competencies, only three received significantly different mean importance ratings at the .05 level or better. These items dealt with directing student study, use of bulletin boards and the use of role playing and simulation.

APPENDIXES

APPENDIX A

INDUSTRIAL ARTS

INSTRUCTIONS

Listed below are various teaching and related skills that may or may not be important to Industrial Arts teachers in programs similar to yours. Please read each item carefully and rate each item based on its importance to Industrial Arts teachers in programs similar to yours. There are no right or wrong responses; some items may be important while others may not be important. Please rate the importance of each item by circling the appropriate number to the right, from: 1 = Very Important to 6 = Not Important. Note that the first item has been marked as an example.

	Very Important					Not Important
0. Use sound principles of public speaking.	1	(2)	3	4	5	6
1. Identify deficiencies in Ind. Arts program such as facilities, tools, equipment, etc.	1	2	3	4	5	6
2. Maintain contacts with industry	1	2	3	4	5	6
3. Identify the appropriate county and state personnel to solve educational problems.	1	2	3	4	5	6
4. Comply with state laws and regulations relative to education.	1	2	3	4	5	6
5. Establish and maintain an advisory committee	1	2	3	4	5	6
6. Coordinate Industrial Arts program with other disciplines.	1	2	3	4	5	6
7. Apply research in Industrial Arts.	1	2	3	4	5	6
8. Develop and use unit lesson plans.	1	2	3	4	5	6
9. Develop a comprehensive teaching plan for a term's work	1	2	3	4	5	6
0. Identify long-range goals for a course	1	2	3	4	5	6
1. Meet the needs of disadvantaged students in the Industrial Arts program	1	2	3	4	5	6
2. Provide bilingual instruction to meet the needs of students with language difficulties.	1	2	3	4	5	6
3. Meet the needs of handicapped students in the Industrial Arts program.	1	2	3	4	5	6
4. Select and use text, reference material and special teaching aids	1	2	3	4	5	6
5. Establish an order of business for each class/lab session.	1	2	3	4	5	6
6. Prepare directions for a substitute teacher	1	2	3	4	5	6
7. Provide performance-based instruction	1	2	3	4	5	6
8. Direct individual and group field trips.	1	2	3	4	5	6
9. Conduct group discussions	1	2	3	4	5	6
0. Stimulate learning through brainstorming and buzz group techniques.	1	2	3	4	5	6
1. Direct students in instructing other students.	1	2	3	4	5	6
2. Employ the techniques of role-playing and simulation	1	2	3	4	5	6
3. Direct student study of texts and references	1	2	3	4	5	6
4. Direct student laboratory experience.	1	2	3	4	5	6
5. Direct students in applying problem-solving techniques.	1	2	3	4	5	6
6. Direct the project method	1	2	3	4	5	6
7. Employ oral questioning techniques	1	2	3	4	5	6
8. Employ reinforcement techniques	1	2	3	4	5	6
9. Provide instruction for slower and more capable students	1	2	3	4	5	6
0. Present information through an illustrated talk	1	2	3	4	5	6
1. Demonstrate a manipulative skill	1	2	3	4	5	6

over

Very Important

32. Demonstrate a concept or principle 1 2 3 4
33. Direct individualized instruction. 1 2 3 4
34. Conduct team teaching. 1 2 3 4
35. Present information using a subject matter expert 1 2 3 4
36. Illustrate with models and real objects. 1 2 3 4
37. Illustrate with bulletin boards 1 2 3 4
38. Present information with overhead projector 1 2 3 4
39. Present information with filmstrips and slides 1 2 3 4
40. Present information with films. 1 2 3 4
41. Present information with televised materials 1 2 3 4
42. Direct programmed instruction 1 2 3 4
43. Present information with the chalkboard. 1 2 3 4
44. Design, experiment with and solve technical problems 1 2 3 4
45. Assess student performance with respect to cognitive, affective and psychomotor objectives 1 2 3 4
46. Evaluate instructional effectiveness. 1 2 3 4
47. Construct, use and interpret evaluation devices 1 2 3 4
48. Enforce safe working procedures and habits relating to tools and machinery 1 2 3 4
49. Provide for first aid needs of students. 1 2 3 4
50. Take precautions against fire and other dangers 1 2 3 4
51. Organize and maintain the industrial arts laboratory 1 2 3 4
52. Maintain a system of tool and equipment maintenance. 1 2 3 4
53. Maintain a system for inventory of equipment and equipment records. 1 2 3 4
54. Maintain a system of inventory for supplies 1 2 3 4
55. Maintain an orderly classroom 1 2 3 4
56. Assist students in developing self-discipline. 1 2 3 4
57. Project resource needs 1 2 3 4
58. Prepare request for tools and equipment for county and state funding guide 1 2 3 4
59. Identify and obtain additional sources of revenue for program 1 2 3 4
60. Utilize appropriate classroom and laboratory housekeeping practices 1 2 3 4
61. Utilize laboratory-oriented student personnel system 1 2 3 4
62. Maintain student attendance records 1 2 3 4
63. Maintain cumulative records. 1 2 3 4
64. Maintain individual student assessment profiles of skills and attitudes 1 2 3 4

CONTIN

	Very Important					Not Important
. Organize and operate an industrial arts club	1	2	3	4	5	6
. Maintain high level of enthusiasm toward teaching	1	2	3	4	5	6
. Exhibit a positive attitude toward the school, staff and administration	1	2	3	4	5	6
. Exhibit a positive attitude toward recommended machine and tool use and care	1	2	3	4	5	6
. Exhibit a positive attitude toward the world of work	1	2	3	4	5	6
. Maintain a positive attitude and a high level of confidence in self	1	2	3	4	5	6
. Use effective written communication	1	2	3	4	5	6
. Use effective oral communication	1	2	3	4	5	6
. Complete assigned tasks on time	1	2	3	4	5	6
. Belong to and participate in appropriate professional organizations	1	2	3	4	5	6
. Demonstrate behavior and procedures appropriate for a professional educator.	1	2	3	4	5	6
. Establish a professional library	1	2	3	4	5	6
. Demonstrate broad knowledge of industry.	1	2	3	4	5	6

In the blanks below, please add any additional Industrial Arts teaching skills that you feel are important. Please rate the importance of these additional skills.

8. _____	1	2	3	4	5	6
9. _____	1	2	3	4	5	6
0. _____	1	2	3	4	5	6
1. _____	1	2	3	4	5	6
2. _____	1	2	3	4	5	6
3. _____	1	2	3	4	5	6
4. _____	1	2	3	4	5	6
5. _____	1	2	3	4	5	6

PROFESSIONAL DATA

Please check the appropriate response for each item as it applies to you in your current position.

1. Your present position: ___ I.A. Teacher; ___ I.A. Supervisor.
2. If teacher, what level: ___ Middle School; ___ Secondary School.
3. No. of years in present position (teacher or supervisor): ___ 1-5; ___ 6-10; ___ 11-15; ___ 16-25; ___ over 25.
4. Total number of years teaching Industrial Arts: ___ 1-5; ___ 6-10; ___ 11-15; ___ 16-25; ___ over 25.
5. Total number of years in business or industry: ___ 0-5; ___ 6-10; ___ 11-15; ___ 16-25; ___ over 25.
6. Highest degree held: ___ High School; ___ Associate; ___ Bachelor's; ___ Master's; ___ Advanced Master's; ___ Doctorate. No. of qtr. hours beyond your highest degree: ____.
7. Age: ___ 20-30; ___ 31-40; ___ 41-50; ___ 51-60; ___ over 60.
8. Sex: ___ Male; ___ Female.
9. To allow us to contact non-respondents, please indicate your county: _____.

College of Education
Vocational Education
904 Wildwood Drive

The Florida State University
Tallahassee, Florida 32306

November 19, 1975

TO: Selected Industrial Arts Teachers

Dear Colleague:

You have been identified as an industrial arts teacher in your district who is doing an outstanding job. We need your help! We are in the process of identifying teaching and related professional skills that are important to industrial arts teachers. These skills may then serve as the basis for teacher training programs.

Enclosed is a survey instrument which lists various professional skills that may or may not be important to industrial arts teachers. We ask that you please rate these items as to their importance and return the instrument to us in the business reply envelope enclosed. Your responses will be held in strict confidence.

We realize your professional duties demand much of your time, however, you are the most qualified source to determine which skills are most important to industrial arts teachers. Your help will be greatly appreciated. We look forward to receiving your responses. Thank you.

Sincerely,

James Heggen
Associate Professor

APPENDIX C

College of Education
Vocational Education
904 Wildwood Drive

The Florida State University
Tallahassee, Florida 32306

November 19, 1975

TO: Selected Industrial Arts County Supervisors

Dear Colleague:

We need your help! At the October meeting in Tampa, several supervisors expressed a need to change the present system of industrial arts teacher preparation. Since that meeting, the Industrial Arts department at Florida State University has become involved in an exemplary Competency-Based Teacher Education project.

Our goal is to identify professional skills most important to industrial arts teachers in the state. These skills may then serve as the basis for teacher preparation programs. We feel practitioners in the field are the best source to identify these important skills.

We ask your help by doing the following:

1. Please complete the attached survey instrument which lists various professional skills and return to us by December 3, 1975, in the enclosed business reply envelope. Your responses will be held in strict confidence.

2. Please distribute the additional packets of materials (which contain an identical instrument, a cover letter and a return envelope) to local middle and high school industrial arts teachers who you feel are doing an outstanding job.

Since only seven counties are represented in this survey, it is very important that we receive as many responses as possible. Please complete the instrument and encourage your local teachers to complete and return their copy by December 3, 1975.

Your help will be greatly appreciated. We look forward to receiving your response. Thank you.

Sincerely,

James Heggen
Associate Professor

APPENDIX D

College of Education
Vocational Education
904 Wildwood Drive

The Florida State University
Tallahassee, Florida 32306

January 5, 1975

TO: Selected Industrial Arts Teachers

FROM: James Heggen, Associate Professor

SUBJECT: Survey Instrument for Industrial Arts Teachers

Recently your supervisor distributed to you a survey packet asking you to participate in an exemplary project, identifying skills important to Industrial Arts Teachers.

As a follow-up, we are asking your assistance by completing the enclosed survey instrument and returning it to us by January 16. If you have returned the original instrument, please disregard this additional request. Thank you for your assistance.

If you have not responded, please complete and return the enclosed instrument by the date requested. Your reply is vital to the success of the project.

Your assistance is sincerely appreciated

CW

Enclosures: Survey Instrument
Reply Envelope

APPENDIX E

Open-Ended Responses

1. Develop an operational and fair system of clean-up.
2. Need some work experience.
3. Need experience in preparing and evaluating exams.
4. Provide pre-vocational guidance to students.
5. Sincere interest in human beings.
6. Be fair and equitable with students.
7. Set example of honest work and cooperation.
8. Know that there is another possible answer (admit mistake).
9. Ask students for advice.
10. Ask parents for help in solving problems.
11. Ask industrial arts personnel for help.
12. Give students planning problems for their future work.
13. Enforce eye safety.
14. Provide an atmosphere where every child can experience success.
15. Establish a classroom industrial arts library.
16. Positive public relations with rest of school.
17. Communication of industrial arts to rest of school.
18. Teaching with individual concern (liking students).
19. Maintain equipment.
20. Be able to deal with wide range of student ability in same class.
21. Maintain equipment.
22. Be innovative with low budget.
23. Update one's technical and teaching skills, i.e., workshops, inservice and college courses.

24. Be receptive to changes in curriculums and new philosophies in industrial arts.

25. Consider each student on an individual basis when evaluating.

26. Exhibit and encourage an appreciation of working with one's hands.

27. Show an interest in the students' personal activities.

28. Treat all students equally.

29. Set the stage and get off.

    a. Do not take over 5 minutes for demonstration.

    b. Give the boy something to do.

    c. Have a project that the student can make.

30. Be honest with students.

31. Disciplinary and leadership ability.

32. Organization ability.

33. Demonstrate knowledge of the role of industrial arts education.

34. Provide occupational guidance.

35. Provide student with curriculum guides and state goals and objectives.

36. Conduct multi-student activities in laboratory.

37. Being able to get all students in every class.

38. Keeping records--attendance, attitudes, and responsibility.

39. Use industrial arts materials, such as safety posters etc., effectively.

40. Number 27 suggests:
    a. #8 and #9 need special people
    b. #35 and #44 take too much time
    c. #58 and #59 supervise job
    d. #63 = office job
    e. #77 near impossible.

41. Use of videotape equipment and develop industrial arts materials.

42. Workshops to advance technical skills--hands on--as it is done in industry.

43. Knowledge of currently available commercial teaching aids.

44. Keep abreast of developments and literature in the field.

45. Exhibit a positive attitude toward the value of all learning in all fields.

46. High level of knowlege and competency in using machine.

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